

as dark as French males, when, according to the theory, all ought to have been Italians like their mother, I thought it necessary to examine these males more closely. I therefore collected 300 of them and examined them most carefully, obtaining the following statistics :—

151 were pure Italians.

66 were hybrids in different degrees.

83 were French.

From this it is evident that the drone eggs, like those of the females, receive the contact of the semen deposited by the male in the female organs ; and the theory of Dzierzon, proposed to explain an insufficiently ascertained fact, becomes useless if this fact is disproved.

It is easy to understand how an insufficient observation may have led to the belief that the drones, the sons of an Italian mother fecundated by a male of a different race, were all Italians. Of 300 males only 83 appeared to me to be strictly French, while 151 + 66 or 217, *i. e.* the great majority, being yellower than the French drones, might easily pass for pure Italians. Thus, in such cases, if a great number of males in a hybrid hive have not been carefully examined one by one, it is easy to understand how it might be believed that they all belonged to the same race as their mother, especially when the latter belongs to the handsomer and yellower race.—*Comptes Rendus*, September 9, 1878, p. 408.

*On the Cause of Buzzing in Insects.* By M. JOUSSET DE BELLESME.

Referring to the paper on this subject by M. Pérez, an abstract of which appeared in the last number of this Journal, M. Jousset de Bellesme has laid before the Academy of Sciences a statement of the results arrived at by him, and communicated on August 23 to the "Congrès pour l'Avancement des Sciences." He says :—

All insects in which the rapidity of vibration of the wing is above eighty vibrations [per second?] emit a perceptible sound provided their wing-surface is sufficiently extensive. The suppression of the wings does away with this sound.

The insects belonging to the orders Diptera and Hymenoptera alone have the faculty of emitting two sounds—that just mentioned, which is deep, and another, sharp sound, generally the octave of the former. This faculty is the essential characteristic of buzzing. When the wings are cut off a *Volucella* or a Humble-bee the deep sound is abolished, but the sharp sound persists ; the deep sound is therefore produced by the wing, while the sharp sound is independent of it.

Landois's opinion, according to which the sharp sound is due to the issuing of the air through the stigmata and the vibration of the valvules with which these are provided, is not tenable, seeing that

if these apertures are stopped with bird-lime the sharp sound continues to be produced with the same intensity.

Its origin must be sought in the mechanism by which the wing is set in motion. In buzzing insects the muscles of flight are not inserted directly upon the wing, but upon the pieces of the thorax which carry it. It is the movement of these that moves the wing and makes it vibrate. The thorax therefore undergoes alternate and incessant changes of form under the influence of the contraction of the motor muscles of the wing: in repose a section of this region represents an ellipse elongated vertically; muscular action transforms it into an ellipse elongated laterally. The entire thorax therefore vibrates successively in the direction of its two diameters. As the muscular masses are very powerful, this vibratory movement is very intense, as we may easily ascertain by holding between the fingers a Humble-bee with its wings cut off, but which still seeks to fly away. The thorax consequently forms a vibrating body, which directly concusses the surrounding air, just in the same way as the branch of a diapason for example. In the insects in question the vibrations are repeated a great number of times per second, and there is produced a musical sound which is nothing but the sharp sound characteristic of buzzing. Large insects produce the sharp sound with more intensity than small ones, because the vibrating surface of the thorax in contact with the air is more extensive.

If the thoracic sound, after the cutting away of the wings, is higher than the sound produced directly by the movement of the latter, this is because, during flight the resistance of the air moderates the velocity of contraction of the muscles; while, when the wings are suppressed, the muscles, vibrating without producing any useful effect, attain their maximum velocity.

After the removal of the wings, by attaching a style to the upper wall of the thorax, we may directly inscribe its vibrations; and in this way I obtained traces in which the number of vibrations corresponds exactly to the height of the sharp sound perceived by the ear. There can therefore be no doubt as to the thoracic origin of this sound.

Buzzing occurs only in the Hymenoptera and Diptera, because it is only in these insects that the deformation of the thorax by the action of the muscles of flight takes place over a surface sufficiently extensive to produce a perceptible sound.—*Comptes Rendus*, Oct. 7, 1878, p. 535.

*On the Ascarides of the Seals and Toothed Whales.*

By Dr. H. KRABBE.

Professor Leuckart's notice\* of an Ascarid voided by a child in Greenland, which he described under the name of *Ascaris maritima*, and supposed to have probably belonged to a seal or some other

\* Die menschlichen Parasiten, Bd. ii. 1876, p. 877.